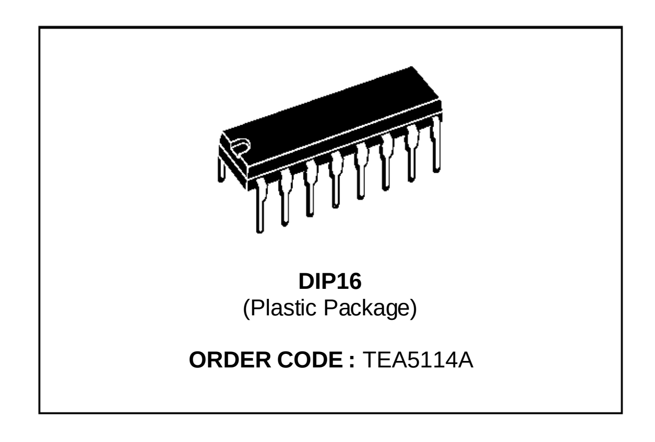


TEA5114A

RGB SWITCHING CIRCUIT

- 25MHz BANDWIDTH
- CROSSTALK : 55dB
- SHORT CIRCUIT TO GROUND OR V_{CC} PROTECTED
- ANTI SATURATION GAIN CHANGING
- VIDEO SWITCHING



DIP16
(Plastic Package)

ORDER CODE : TEA5114A

DESCRIPTION

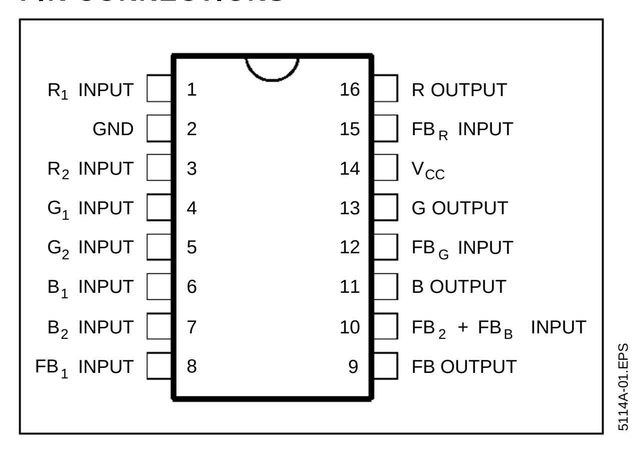
This integrated circuit provides RGB switching allowing connections between peri TV plug, internal RGB generator and video processor in a TV set.

The input signal black level is tied to the same reference voltage on each input in order to have no differential voltage when switching two RGB generators.

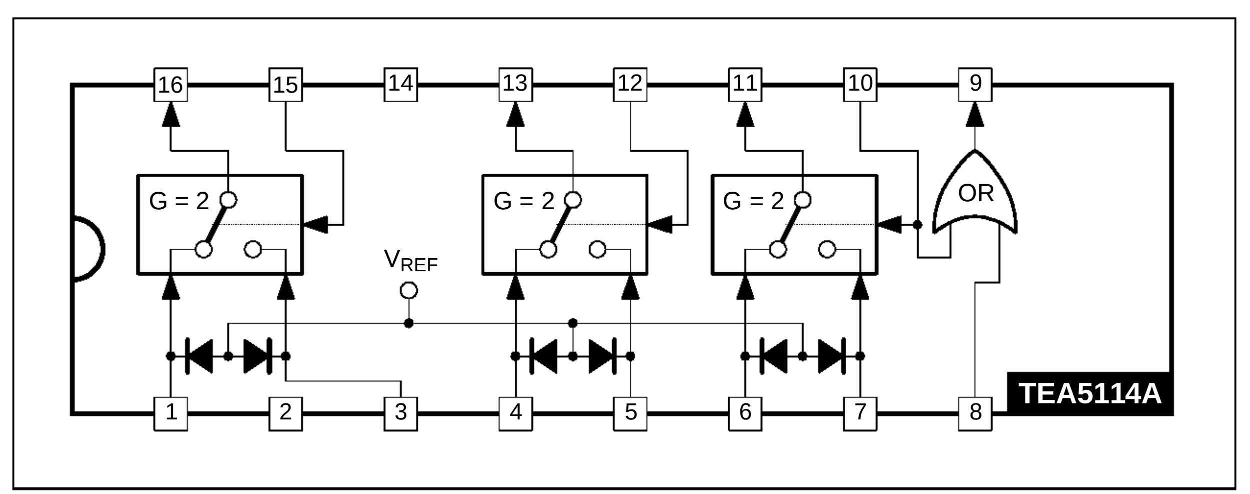
An AC output signal higher than 2 Vpp makes gain going slowly down to 0dB to protect the TV set video amplifier from saturation.

Fast blanking output is a logicial OR between FB1 (Pin 8) and FB2 (Pin 10).

PIN CONNECTIONS



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	18	V
T_j	Junction Temperature	– 40 to 150	°C
T_{stg}	Storage Temperature	– 40 to 150	°C
Z_L	Minimum Load Resistor on Each Output V_{CC} = 12 V V_{CC} = 10 V	300 150	Ω Ω
T_{amb}	Operating Ambient Temperature	0 to 70	°C

5114A-01.TBL

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient Thermal Resistance	80	°C/W

5114A-02.TBL

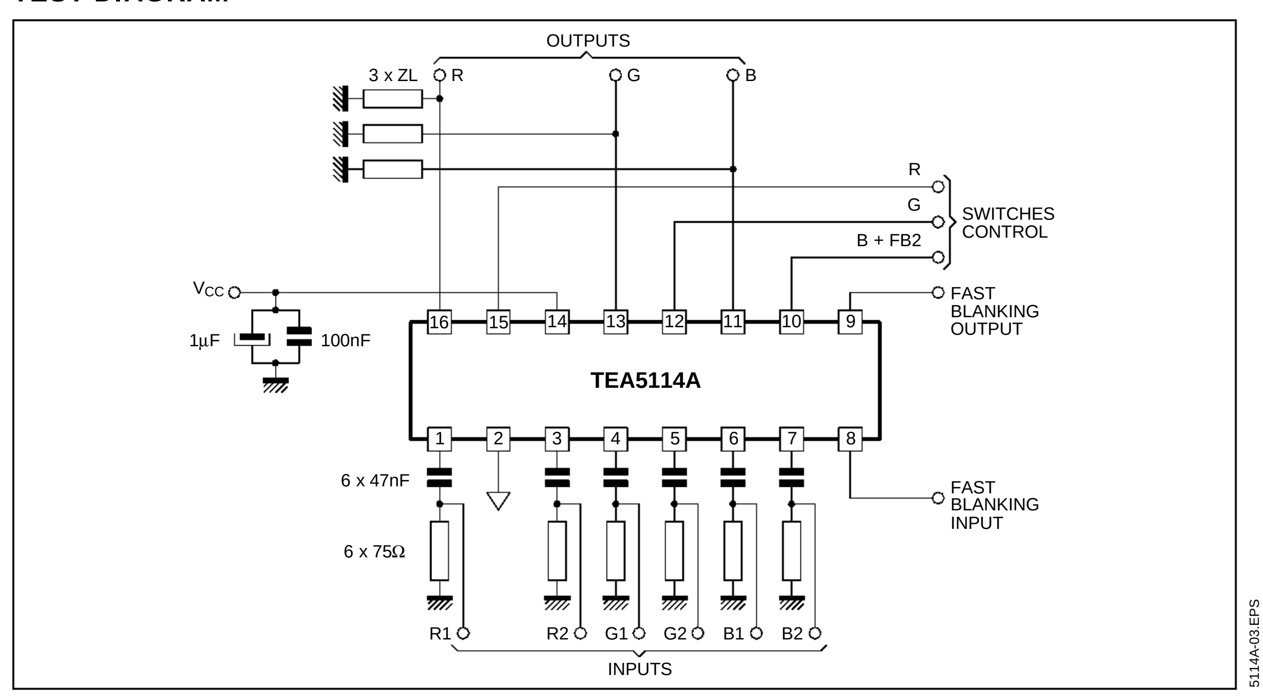
ELECTRICAL OPERATING CHARACTERISTICS

T_{amb} = 25 °C, V_{CC} = 12 V, Z_L (RGB) = 300 Ω
V_{CC} = 10 V, Z_L (RGB) = 150 Ω (unless otherwise specified)

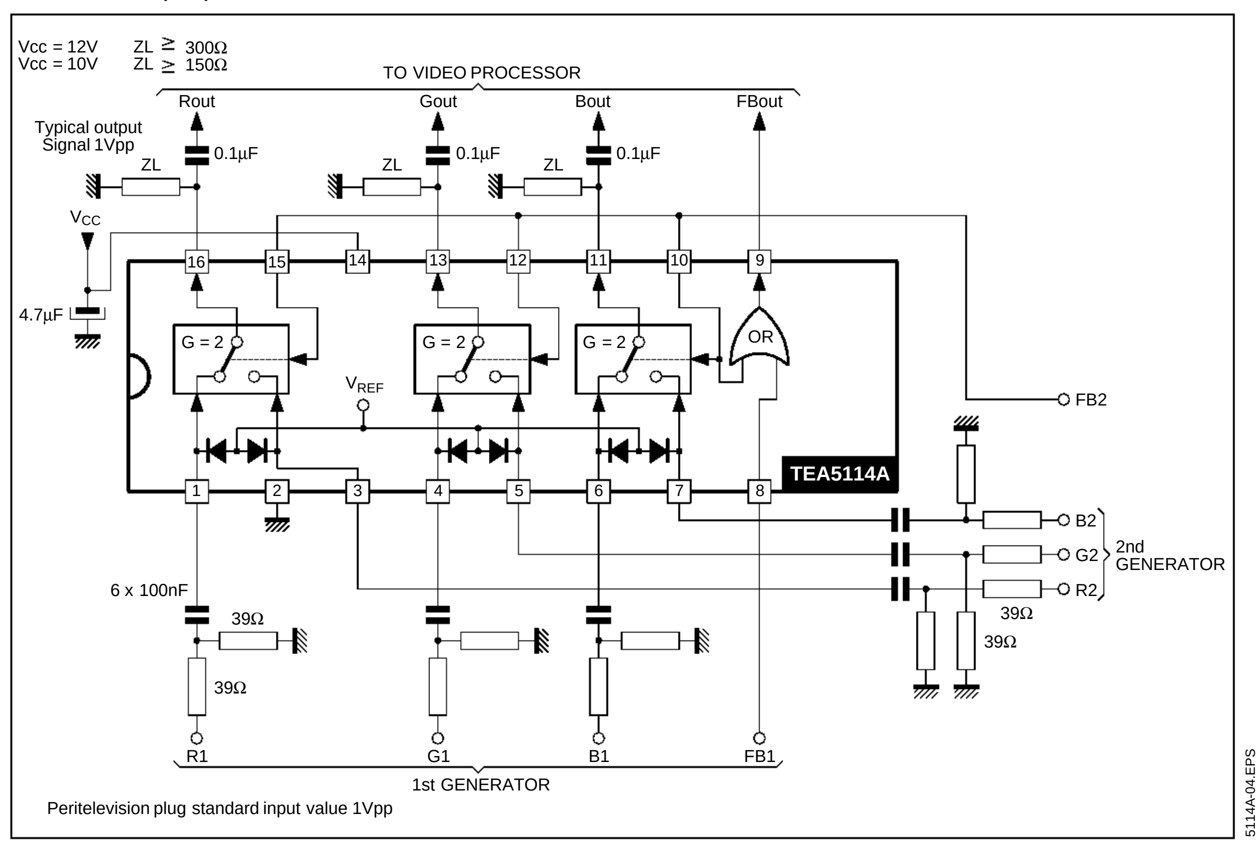
Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{CC}	Supply Voltage	9	12	13.2	V
I_{CC}	Supply Current without Load V_{CC} = 12 V	20	30	40	mA
V_{ON}	Black Level Output Voltage (on pins 11, 13, 16 square wave output signal 1 kHz - 1 Vpp) T_j = 25 °C (5mV/°C typical variation)	1.8	2.5	2.9	V
G_{RGB}	Gain of Each Channel Pins 11, 13, 16 F = 1 MHz , V_{in} = 0.5 V_{pp}	5	5.5	6	dB
B_{RGB}	Bandwidth (– 3 dB) V_O = 1 V_{pp}	18	22		MHz
V_{GC}	Threshold Output Voltage for Gain Changing (– 0.5 dB)	2			V_{pp}
V_R	Video Rejection between Two Inputs R, G or B F = 1 MHz Sinus V_O = 1 V_{pp}	50	55		dB
Z_{IRGB}	Input Impedance on Pins 1, 3, 4, 5, 6, 7 V_O = 1 V_{pp}	10			kΩ
Z_{ORGB}	R, G, B Output Impedance on Pins 11, 13, 16			15	Ω
T_{FB}	FB rising and falling time on pin 9. 1 Vpp Input Voltage Pins 8, 10		20		ns
V_{IHFB}	FB High Level Input Voltage on Pins 8, 10, 12, 15	1		4	V
V_{ILFB}	FB Low Level Input Voltage on Pins 8, 10, 12, 15	0		0.4	V
Z_{IFB}	Input Impedance on Pins 8, 10, 12, 15	0.7	1	1.3	kΩ
V_{OHFB}	High Level FB Output Voltage (pin 9) Input 1 V on Pins 8, 10	0.8	1	1.2	V
V_{OLFB}	Low Level FB Output (pin 9) Input 0 V on Pins 8, 10			0.3	V
Z_{OFB}	FB Output Impedance Pin 9 High Level			30	Ω
T_{dFBRGB}	Delay Time between FB Inputs and R, G, B Switching		20		ns

5114A-03.TBL

TEST DIAGRAM

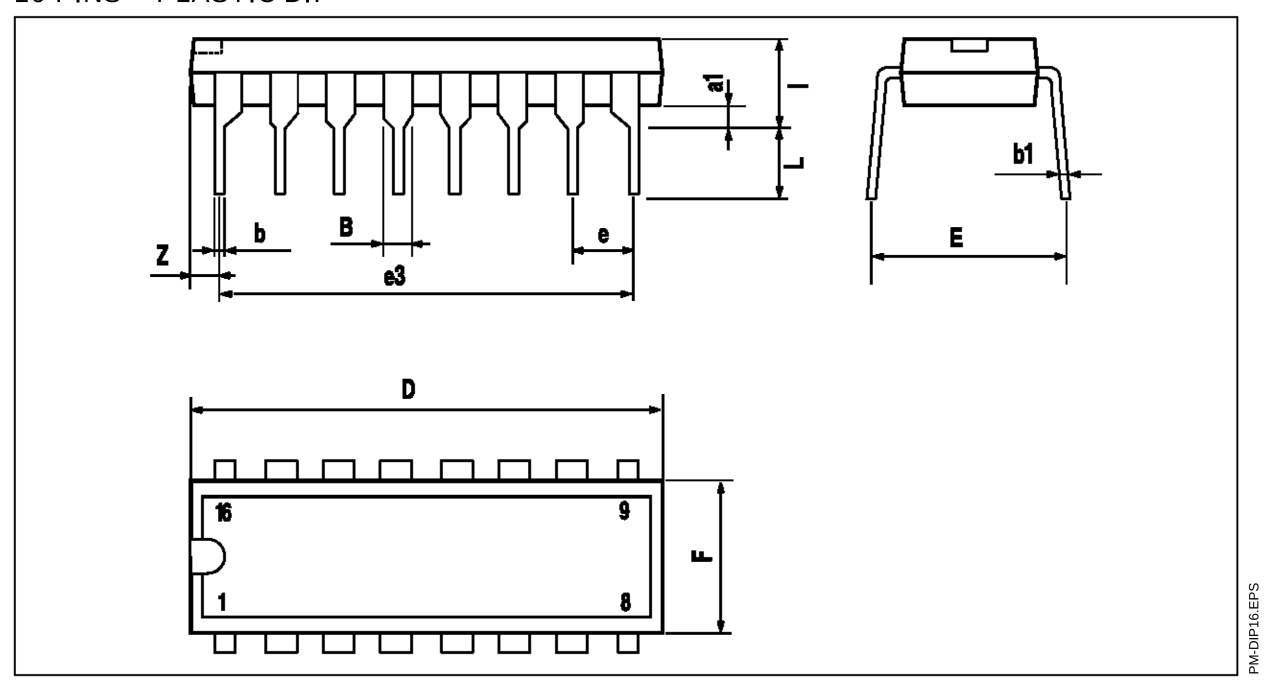


TYPICAL R, G, B SWITCHING APPLICATION



PACKAGE MECHANICAL DATA

16 PINS – PLASTIC DIP



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.51			0.020		
B	0.77		1.65	0.030		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		17.78			0.700	
F			7.1			0.280
I			5.1			0.201
L		3.3			0.130	
Z			1.27			0.050

DIP16.TBL

